Relationship between Vertical Transfer Students' Grit, First-Semester Academic Performance, and Social Integration

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Dedications

With an eternally grateful heart, this dissertation is dedicated to:

My husband, Steven, and my littles, Isabella and Alexander. When I committed to this program I was keenly aware that I was committing all of us. This journey was not something you asked for or particularly wanted. Yet it required a team effort until the very end. Truth be told, at times you all shouldered most of the weight. Thank you for your patience, support, and love (even on days when it was begrudging at best).

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Abstract

Relationship between Vertical Transfer Students' Grit, First-Semester Academic Performance and Social Integration

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The pathway for community college students to transfer vertically into four-year institutions to complete a bachelor's degree was designed nearly a century ago, yet it remains plagued by the same structural problems, such as confusing admissions processes, lack of transparent advising resources, and unrealistic time-to-degree demands without guidance (Handel & Williams, 2012). These transfer pathways have been built upon cognitive variables and provide minimal insight into the role non-cognitive qualities play in vertical transfer students' first-semester academic performance and social integration.

This quantitative non-experimental study examined the relationship between 405 vertical transfer students' self-reported grit, academic performance, and social integration during their first semester of enrollment in a four-year college or university. The students are referred to in the study as the VTR cohort. Following analysis of the cohort's Short Grit Scale (Grit-S) surveys, along with academic performance and social integration data retrieved from the study site's Ellucian Banner, Canvas, and OrgSync platforms, the data provided clear conclusions to the research questions.

Except for a weak statistically significant negative correlation between students' grit and missing assignments in Canvas, one of the variables defining the VTR cohort's academic performance, there was no statistically significant relationship between grit and the cohort's academic performance or social integration and no difference in grit scores based upon grade point average (GPA) performance above or below 2.00.

The study findings suggest that vertical transfers demonstrate the capacity to successfully complete an associate degree, and therefore are "gritty" upon entrance into a four-year institution. Strayhorn's (2008) research demonstrated a positive association between grit and achievement, which serves to support the lack of such a relationship in this study. Furthermore, vertical transfer students may opt not to formally engage with structured social integration platforms and services within four-year institutions, but the absence of formal engagement does not correlate with students' low grit scores or any significant reduction in their academic performance. Based upon these conclusions, the researcher recommends the study site and the field of higher education continue to examine the non-cognitive variables and practices that may impact the transfer pathway, both for vertical transfers and for the 13 other subsets within the transfer population (Handel & Williams, 2012). Conclusively, further qualitative research is suggested to explore the personal experiences of vertical transfer students during their transition into four-year institutions.

Chapter 1: Introduction

Introduction to the Research

The pathway for community college students to transfer into four-year institutions to complete a bachelor's degree was designed nearly a century ago, yet it remains plagued by the same structural problems, such as confusing admissions processes, lack of transparent advising resources, and unrealistic time-to-degree demands lacking guidance (Handel & Williams, 2012). The American Association of Community Colleges [AACC] (2012) estimates that 44% of the undergraduate population, roughly 13 million students, is enrolled in community colleges. Interestingly, National Center for Education Statistics (NCES, 2011) data reveals that over 80% of the undergraduate students entering community colleges indicate aspirations to earn a bachelor's degree or higher, though data reveals that many students do not progress toward their goals. The NCES (2010) also found that six years post-matriculation, two-thirds of first-time community college students had not earned a degree or certificate, indicating that roadblocks remain and impact transfer students' movement through the pathway.

According to the AACC (2016), 45% of minority undergraduates in the nation are enrolled in community colleges, including 52% of all African American and 57% of all Hispanic undergraduates. Current AACC statistics indicate that 25-35% of community college student's transfer into four-year settings. Yet only about 60% will graduate within four years, having completed two years of study at a community college and two years of study in a four-year setting (Fain, 2012). These findings indicate that 40% of students will not make timely progress, meaning graduating within four to six years, or at all. Such findings are even more telling when one considers, as Dougherty (1994) states, that

"many students (particularly among working-class and minority youth) enter the community college in the belief that it will greatly assist their pursuit of the baccalaureate degree" (p. 67-8). Dougherty and Kienzl (2006) also note that minorities – particularly Blacks and Hispanics – transfer into four-year institutions at lower rates than their White peers. Fain's (2012) findings showed that the outlook for minorities once they vertically transfer is not positive, as they do not show timely progression to graduation.

While minorities as a group are impacted by lack of progress, Rendon (1992) comments that the highest concern with respect to progress towards a baccalaureate most directly impacts "students of color, particularly Hispanics and Native Americans who traditionally have used community colleges as a means to initiate college-based programs of study" (p. 4). Boswell (2004) stresses that opportunity is often a function of education, but opportunity is often overshadowed by students' failure to progress and graduate. In President Barack Obama's 2009 State of the Union Address, he declared that a good education is no longer a pathway to opportunity – it is a requirement. Cuseo (2001) notes that both Arciniega (1990) and Johnson and Packer (1987) foreshadowed this reality with their work when they stated that most of the 21st-century jobs in the United States would require baccalaureate-level education. This expectation is a daunting requirement at best and a setup for failure at worst, since the literature consistently demonstrates the challenges vertical transfer students' face, most specifically minority students, with integrating into four-year settings and ultimately graduating.

Nearly ten years after Boswell shared his position on opportunity, the transfer pathway remains challenging for students; in fact, his assertions that the pathway must remain unfettered was reinforced by AACC's (2012) 21st Century Commission on the

Future of Community Colleges statement that, with respect to two-year graduates, the United States must find 15 to 20 million employees by 2025 to replace an aging skilled workforce. Carnevale, Smith, and Strohl (2010) surveyed the U.S. workforce on educational attainment from 1973 to 2018 and their findings reflect a definitive shift in the minimum education required for students to become viable members of the workforce. In 1973, almost three-quarters of individuals were employable with only a high-school diploma or its equivalent, which meant that only one-quarter of employees possessed a degree – associate, bachelors, master's, etc. (Carnevale et al., 2010). In 2007, however, the researchers found that 59% of employees needed a postsecondary degree or advanced credentials to be employable.

Students and parents alike view the presence of "two-year institutions within their community as vehicles of social mobility, stressing the transfer function as [an] avenue of advancement" (Handel, 2013a, p. 5). Community colleges have served as gateways to higher education and subsequently the middle class and employment opportunities. However, potential consequences await both vertical transfers and society as a whole until the transfer pathway is adjusted to ease and increase vertical transfer rate and retention through graduation (AACC, 2012). Baker (2016) notes that several researchers, including Averett and Dalessandro (2010), Belfield and Bailey (2011), and Jaeger and Page (1996), have found that students who have invested "time and money in college but earn no degree and do not accrue […] labor market benefits associated with college completion" (p. 626). Baker (2016) highlights the societal aspect of this concern, as expressed by Hillman (2014):

> Taxpayers, who provide the majority of funding for community colleges, subsidize seats in classes for students who never earn the credentials needed to

> power the state's workforce, and students who do not complete degrees are much more likely to default on their student loans than students who graduate. (p. 626)

The United States may not meet its employee needs in the next ten years, and repercussions for society and individual fiscal burden will persist unless the barriers and challenges transfer students face are delineated and addressed to increase their four-year retention and graduation. According to Hagedorn and Lester (2006), "Acquisition of a bachelor's degree can be likened to an admission ticket allowing entrance to the middle class and beyond where economic and social mobility are possible" (p. 830). Therefore, the challenge lies in understanding and addressing the impediments to realizing this achievement.

While plentiful in identifying cognitive factors that impact outcomes, present data and awareness of vertical transfer student social integration and academic performance in four-year settings has not served to mediate the challenges faced by this population. The continuation of said challenges may be in large part because the term "transfer," in the literature is multi-dimensional at best and arbitrary at worst. As an example, Handel and Williams (2012) identified 14 variations for how the term is defined. Because the definition has not been static, concerns about efficacy in measurement and evaluation naturally follow. Out of the many variations, the "vertical transfer" experience was the focus of the present study to define students moving from a two-year into a four-year institutional setting (Handel & Williams, 2012). The term vertical transfer refers to a "function that leads to the baccalaureate – a symbolic prize that has the most potential to facilitate social and economic mobility for the poor, the disadvantaged, and people of color" (Rendon, 1992, p. 5). Embedded in this function is often an environmental obstacle for vertical transfers, the obstacle of transitioning from one institutional culture

to another (Fortin, 2016). In this study, the construct of grit was specifically examined to understand its role in vertical transfer students' academic and social transitions into a four-year institution.

In light of the United States' workforce needs as 2025 draws closer, a shared investment in removing barriers to acclimation, progression, and time-to-degree completion for transfer students must be a priority, and understanding the role grit plays in first-semester outcomes will help influence transfer pathway adjustments (Carnevale & Rose, 2011). "Acclimation" refers to the process of familiarizing and growing comfortable navigating within an environment. "Progression" is defined by the number of attempted hours as compared to earned hours each semester. "Time-to-degree completion" is defined by rates, specifically statistics indicating when students transferred in and how many semesters they were enrolled prior to graduating.

According to Kienzl, Wesaw, and Kumar's (2012) Institute for Higher Education Policy (IHEP) report, transfer rates often vary depending upon an institution's definition of transfer. The fluctuation in rates appears to be connected to Handel and William's (2012) determination that there are at least 14 variations of transfer. As part of the University of California, Berkeley's Center for Studies in Higher Education paper series, Cohen (2003) introduced the following standard definition to bring order and consistency to the calculation of transfer data:

> All students entering the community college in a given year who have no prior college experience and who complete at least 12 college credit units within four years, divided into the number of that group who take one or more classes at a public, in-state university or college within four years. (p. 2)

While not inclusive of all potential transfer pathways, this definition encapsulates the vertical transfer process and remains a benchmark definition in the literature.

Institutions regard transfer rates as an appropriate measure, but a general consensus on how such a rate should be calculated remains elusive (Handel & Williams, 2012). Lack of progression on this matter is often attributed to the fact that transfer rates are inextricably linked to the definition and meaning of the term *transfer* within each institution. Analysts and stakeholders often stress definitions and meanings that directly shape the findings they wish to highlight and omit labels that incorporate the transitional experience transfer students undergo (Cohen, 2003).

Due to the politicized undercurrent concerning the definition of the term *transfer* and the overreliance on cognitive factors for transfer success or failure, researchers are cautioned to regard data and rates with a dose of skepticism (Marling, 2013). Caution is encouraged when considering time-to-degree and vertical transfer students' success, as these measures may not evaluate or identify what truly affects transfer student acclimation and/or academic performance, specifically what non-cognitive qualities may affect them. Thus, institutions in the short term will continue to see vertical transfer students struggle with pathways that were not built to address their acclimation needs and in the long term jeopardize the goal of ensuring that the U.S has enough employees to replace the workforce.

The literature reflects an exploration of how transfer students, when compared to their native peers, acclimate and integrate into four-year settings and what role, if any, their inherent non-cognitive traits play. Integration as a construct is important to consider because the foundation of the vertical transfer experience is the transition from one campus community to another. Tinto (1993) identified two types of integration, both of which will be examined in this study: academic integration, or "the formal education of

students [that] center[s] around the classrooms and laboratories of the institution and involve[s] various faculty and staff whose primary responsibility is the education [of] students," and social integration, the "reoccurring sets of interactions among students, faculty and staff that take place […] outside the formal academic domain of the college" (p. 106-07). One area of minimal inquiry is if and how well vertical transfer students make this transition and integrate into the four-year environment.

Introduction to the Problem

Seamless transfer pathways for admission and adjustment have been created between two- and four-year institutions, but these pathways have been built upon cognitive variables and provide minimal insight into the role non-cognitive qualities play in vertical transfer students' first-semester acclimation and academic performance.

Statement of the Problem to Be Researched

The inception of the transfer student pathway, an outgrowth of the community college movement and a response to the movement to differentiate the educational-labor system dynamic within the U.S., is over 100 years old (Handel, 2013b). During the late 19th century, this pathway provided a means for more high-school graduates to seek social and societal stability while accounting for the concern that while some held the financial and educational prowess to move directly into four-year institutions and toward academic growth based upon their wealth and means, others were apt to thrive in two-year institutions working toward job training due to limited means and/or labor opportunity (Handel, 2013). In essence, this bifurcation represented the following phenomenon:

> An alternate pathway to success in an era when the traditional image of the self-made man who rose to riches through success in the competitive marketplace was

> becoming less and less plausible. The creation of "ladders of ascent" through education thus gave new life to the American ideology of equality of opportunity at the very moment when fundamental changes in the economy threatened to destroy it. (Brint & Karabel, 1989, p. 5)

From the outset, community colleges operated under the mantle of duality in that they were both a terminal-degree resource for vocational or technical pursuits and a transfer-preparation resource for students who would seek to move on to a four-year institution (Eaton, 1994).

Despite the transfer function being one of the central missions of community colleges, research on transfer students and their subsequent adjustment experiences did not begin until the late 1920s. During the first decade of concerted research, Martorana and Williams (1954) identified transfer student challenges and transition hurdles when they observed the phenomenon in which transfer students' grade point average (GPA) performance post-transfer dropped and subsequently stabilized within one or two semesters. Moving forward a decade, John Hills reviewed the preceding literature in 1965, and finding the original results consistent with prior observations, ultimately named this phenomenon "transfer shock". Hill reinforced the inherent challenges along the transfer pathway that remained, but his findings regarding this phenomenon would continue unimpeded for another 50 years.

In 2011, the U.S. Department of Education's (USDOE) Committee on Measures of Student Success recommended changes to the annual persistence and time-to-degree completion rate requirements two- and four-year institutions were required to report to the Integrated Postsecondary Education Support Data System (IPEDS). The report made the especially critical recommendation that outcome should measure data for students not entering an institution for the first time, specifically transfer students. As of 2015-16,

two- and four-year institutions could no longer simply provide first-time, full-time student entrant persistence and retention data, but they must also include transfer persistence and retention data. Due to this change, it is imperative that four-year institutions identify and support the non-cognitive qualities influencing the first-semester vertical transfer experience in order to ensure that subsequent IPEDS data reflect a positive impact on vertical transfer student success and a reduction in their rate of "shock."

Volkwein, King, and Terenzini (1986) labeled transfer students as "self-selected persisters who are continuing their education" (p. 427). This label hews closely to Duckworth, Peterson, Matthews, and Kelly's (2007) grit construct and raises the question of whether grit is a factor in the vertical transfer student experience of moving from a two- to a four-year setting, as doing so implies that these students maintain an enduring goal of achieving a baccalaureate over a long period of time (Fitzgerald & Laurian-Fitzgerald, 2016).

The purpose of the present quantitative study was to examine the relationship between vertical transfer students' self-reported grit, social integration, and academic performance during their first semester of enrollment in a four-year setting.

Research Questions

To meet the study's objectives, the following questions guided the research:

1. Is there a statistically significant relationship between grit and academic performance among vertical transfer students after one semester of enrollment in a four-year institution?

2. Is there a statistically significant relationship between grit and social integration among vertical transfer students after one semester of enrollment in a four-year institution?
3. Is there a significant difference in grit depending upon GPA (2.0 and above vs. 1.99 and below) for vertical transfer students at the end of their first semester in a four-year institution?

Variables Defined

Institution-level data: Used in research questions 1-3 as a correlation and descriptive variable. The Office of Information Technology (OIT) at the site where the study was conducted provides access to aggregate data on institution-level performance, including cumulative GPA, semester GPA, credit hours earned, semester-to-semester retention per entering cohort, and year-to-year retention per entering cohort. It is possible to disaggregate all the institution-level data by various descriptive indicators such as race, gender, sending institution, and class level.

Student-level data: Used in research questions 1-3 as a correlation and descriptive variable. Student-level data was obtained from the university's Ellucian Banner student information system and includes descriptive indicators such as gender, race, sending institution, cumulative GPA at the previous school, attempted credits, earned credits, semester GPA, and cumulative GPA.

Academic performance: Used in research questions 1 and 3 as a dependent variable. This data, sourced from the university's Canvas system, includes semester GPA performance, cumulative GPA performance, academic probation status (if applicable),

page views in Canvas, ratio of time to page view in Canvas, and time in system in Canvas.

Grit: Used in research questions 1-3 as an independent variable. Grit refers to students' self-reported responses on the 8-item Short Grit Scale (Grit-S) survey that was disseminated and collected by the university's Director of Enrollment Management Data and Technology during the Fall 2015 semester.

Social integration: Used in research question 2 as a dependent variable. The data includes students' organizational involvement; portal membership status in OrgSync, which houses all campus events, programs, employment opportunities, and social interaction opportunities; organizational involvement activities as reported in OrgSync; residential status; and cluster of coursework on their schedules during the fall semester.

Conceptual Framework

Researcher Stances and Experiential Base

This study's conceptual framework aligned with the researcher's professional background and personal interests. The researcher has spent over 15 years working in higher education, most recently working closely with students in transition by providing orientation, advising, and support services to incoming transfer students, both vertical and those transferring without an earned associate degree. In this role, the researcher noted a predominantly linear, cognitive approach to working with and evaluating transfer student success at her institution. Student success, or the lack thereof, was defined or rationalized based upon students' prior preparation for higher education work, standardized test scores, and previous high school or other institutional GPA performance. As a result, the researcher believes institutions may not provide adequate social or academic acclimation

support to transfer students because the lens through which these students' retention and success is measured remains focused on cognitive factors.

A dissonance exists between the first-semester programs and services offered to transfer students within the researcher's current work setting and students' end-of-semester academic performance, specifically GPA. Data from the Director of Enrollment Management Data and Technology indicates that at the end of the Fall 2015 semester, approximately 70% of first-semester transfer students had earned a semester GPA below a 2.00, meaning they failed to reach minimum academic retention. This data is consistent with the longitudinal performance of vertical transfer students in the researcher's work setting, and each semester, the reasons generated for transfer students' low academic performance remain grounded in cognitive factors and academic preparation. Conversations initiated to identify ways to address and resolve transfer students' academic performance challenges o result in buy-in for ideas focused on "fixing" cognitive factors or academic preparation (i.e., offering more tutorial services, revising basic skills testing standards, and reviewing transfer student admission standards). Discourse concerning what non-cognitive aspects may impact transfer students' first-semester academic performance is notably missing.

As an administrator who has overseen an office responsible for the transition and academic advisement of transfer students, this research topic is critically important to the researcher. The accepted cognitive-based reasons for transfer students' academic performance concerns at the researcher's institution may perpetuate a self-fulfilling prophecy in which transfer students continue to experience "shock" and struggle academically due to their lack of preparedness. Using her experience and role in higher

education, the researcher was positioned to examine firsthand grit and its relationship to one vertical transfer student cohort's social integration and academic performance.

Conceptual Framework

This research topic is critically important to the researcher, as she works in higher education and has had the opportunity to work closely with vertical transfer students, providing orientation, advisement, and support services to them through their first year of academic study. Of particular concern for the researcher was the observation and perception within her work setting that over half of each incoming cohort of transfer students ended up on academic action by the end of their first semester of enrollment. Little research or probing outside of reviewing students' academic history and cognitive-based measures had been done at the researcher's institution to determine the underlying reasons for transfer students' difficulty. In studying her work site, the researcher was able to examine the vertical transfer experience firsthand, specifically in relation to vertical transfer students' self-reported levels of grit. The researcher also sought to move current research and understanding forward to more clearly understand the relationship between vertical transfer students' non-cognitive qualities, specifically grit, and academic performance and social integration during their first semester so adjustments can be made to support student success in the transfer pathway.

The focus of the literature review for this study was a longitudinal perspective of the vertical transfer student experience, specifically focusing on research on academic performance, grit, and social integration. First, the area of academic performance was explored, specifically how the concepts of academic readiness, the phenomenon of transfer shock, and Tinto's (1988) integration model play affect this aspect of the transfer

process. Additionally, grit – the origin of the construct, what the term means, and how it is presently defined in the literature – was examined to provide a conceptual framework for the non-cognitive variable on which this research is centered. Finally, literature related to social integration was reviewed to understand the roles of well-being and connection on student pathways and behaviors in the vertical transfer experience.

In this study, the conceptual framework (see Figure 1) explored and examined the relationship between grit, academic performance, and social integration inherent in the Fall 2015 vertical transfer cohort (referred to as VTR student cohort in this study) to determine how it related to the vertical transfer students' first-semester experience.

First, literature on academic performance was explored in order to understand how academic readiness and transfer shock influenced and at times impeded vertical transfer students from making successful progress along the transfer pathway (Adelman, 1989; Berger & Malaney, 1993; Boswell, 2004; Cohen & Brawer, 2008; Fain, 2012; Handel, 2013; Hills, 1965; Johnson, 2005; Laanan, 1996; Marling, 2013; Poch & Wolverton, 2006; Rendon, 1992; Rosenbaum, Deil-Amen, & Person, 2006; Spittle, 2013; Susskind, 1996; Thurmond, 2007; Townsend, 1995; Wilson, 2014).

Secondly, the origin and construct of grit was examined in order to conceptualize this non-cognitive quality and consider how it may have manifested within vertical transfer students (Cattell, 1903; Cox, 1926; DeWitz, Woolsey, & Walsh, 2009; Duckworth et al., 2007; Galton, 1892; Gottfredson, 1997; Pritchard & Wilson, 2003; Ryans, 1939; Strayhorn, 2008; Terman & Oden, 1947; Tinto, 1975).

Lastly, social integration practices supporting transfer student well-being and connection, transfer student pathways, and vertical transfer student behaviors based on

the literature and data were examined (Chin-Newman & Shaw, 2013; Fann, 2013; Grites & Farina, 2012; Hokanson & Karlson, 2013; Lester, Leonard, & Mathias, 2013; Pritchard & Wilson, 2003; Townsend & Wilson, 1996; Wang, 2009; Wawrzynski & Sedlacek, 2003; Zalaquett, 2006).

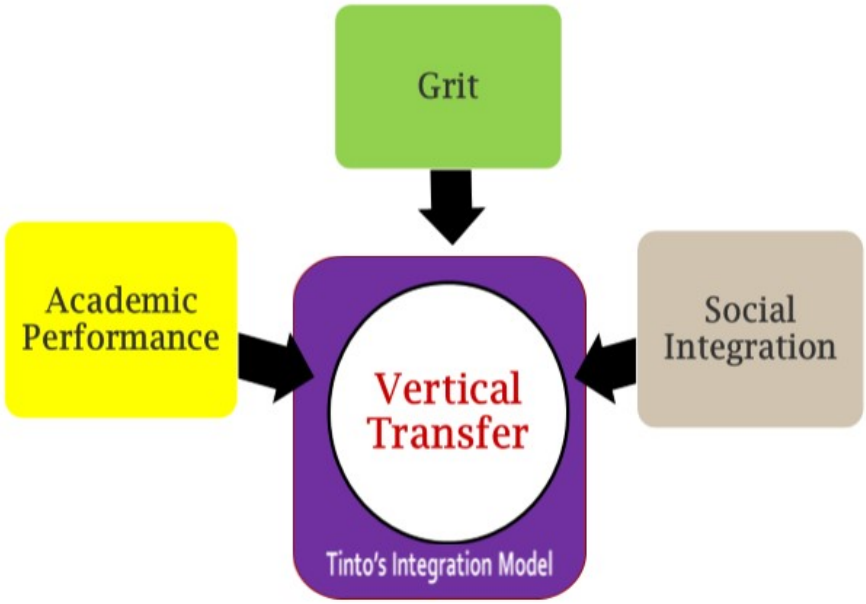

Figure 1. Conceptual framework: A visual guide to the three streams of research and seminal authors guiding this research.

Definition of Terms

For the purposes of this research, the following terms are defined:

Academic pathway: A metaphorical phrase for the steps transfer students complete from the point of admission to graduation; encompasses the curricular and co-curricular path students must follow (Cohen, 2003).

Academic performance: A phrase referring to a transfer student's semester and cumulative GPA standing at the end of an academic semester (Berger & Malaney, 2003).

Grit: A non-cognitive variable or construct referring to one's level of perseverance and passion for long-term goals (Duckworth et al., 2007).

Hispanic-Serving Institution (HSI): U.S. Department of Education designation for a school participating in a federal program that assists U.S. colleges or universities in supporting a majority of first-generation, low-income Hispanic students. Participating schools must be eligible institutions and must enroll an undergraduate full-time equivalent student body that is at least 25 percent Hispanic at the end of the award year immediately preceding the date of application. (USDOE, 2011)

Non-cognitive qualities: Non-cognitive variables such as resiliency, grit, motivation, personality typology, extroversion/introversion, which transfer students intrinsically possess. The qualities span psychosocial, behavioral, and emotional categories (Duckworth & Yeager, 2015).

Transfer shock: A phenomenon coined by Hills (1965) in which transfer students experience a drop in cumulative GPA performance during their first one or two semesters (as compared to their GPAs at their previous school).

Vertical transfer: Refers to students transferring out of two-year settings into four-year settings (Handel & Williams, 2012).

Assumptions and Limitations

There were five foundational assumptions in this quantitative study. First, the collected Grit-S surveys would contain accurate, honest grit feedback from the vertical transfer students since dissemination and collection of the surveys was done in conjunction with transfer student orientation (TSO) events. Second, institution-level data obtained through the Office of Information Technology would encompass the pertinent

academic and retention data specific to the Fall 2015 VTR cohort. Third, Ellucian Banner student-level data would be accurate, robust, and applicable to the research questions. Fourth, the OrgSync and Canvas systems would report accurate analytics on student portal use, time-in-system activity, and page views. Finally, once compiled and analyzed, institutional data, student-level data, and Grit-S data would provide the breadth of information needed to deliver valid findings.

Several limitations for this research study were identified and kept in mind throughout the process. There could have been key stakeholder resistance to allowing access to university information systems because the study sought to understand and report on official student performance, retention, and engagement data. Additionally, when completing the Grit-S surveys, vertical transfer students may not have been honest or forthcoming, as the data was self-reported. Finally, applicability and transferability of the archival data used in the study may be low for other institutions and transfer student populations, as it may only be pertinent to the study site.

In order to create a streamlined and focused line of inquiry, the study was delimited in several ways. The literature review for the study excluded academic works focused on the transition or personal qualities commonly associated with college freshmen, since the focus of this study involved the outcomes associated with a cohort of students who had already completed at least two years of higher education study. The sample also excluded Grit-S survey responses from community college students who were over the age of 25. Within the vertical transfer student population, the sample was further delimited to only include students who had completed an A.A. or A.S. degree so the researcher could examine the experience of vertical transfer students who were

transitioning directly into major-level coursework because earning an associate degree exempted them from completing general education or introductory-level coursework. Finally, only students transferring vertically from a New Jersey two-year institution were included in the sample because they were subject to the rights and requirements stipulated under the State of New Jersey's comprehensive state-wide transfer agreement (2008).

Summary

Conversation surrounding transfer students and the challenges they encounter during their transition to a four-year setting dates back 100 years, yet the dialog remains virtually unchanged. With the challenge now before the United States to increase the number of new employees by 2025 to replace an aging workforce, the conversation must shift away from acceptance of Hill's (1965) observed "shock" phenomenon and presumptive transfer pathway struggles. Instead, the conversation must shift toward identifying how non-cognitive qualities, such as grit, define and determine students' social and academic acclimation needs and, ultimately, their academic success. With data on transfer students and their persistence described as "squishy" by researchers (Fain, 2012), coupled with the impending IPEDS requirement for institutions to accurately account for the entire life-cycle of transfer students, institutions must begin moving the dialog forward in earnest (Fain, 2012). Dialog that moves the needle away from the cognitive and traditional measures of academic performance, which often serve as barriers to transfer students, may provide structure to the persistence that Fain (2012) calls "squishy". Looking more carefully at potential barriers that have remained unexamined will shed light on non-cognitive qualities and explore if and how they relate

to vertical transfer students' academic performance and social integration. This research study examined the relationship between a specific non-cognitive quality, grit, and one VTR cohort's academic performance and social integration during their first semester in a four-year setting. The study provides a lens through which to view the relationship between grit and the VTR cohort experience and, based upon the outcomes, could serve to open up the 100-year-old dialog in a way that acknowledges and reflects the presence and value of non-cognitive qualities in the vertical transfer experience.

Chapter 2: The Literature Review

This chapter presents the literature and concepts related to the design of this study. The study attempted to address the following questions:

1. Is there a statistically significant relationship between grit and academic performance among vertical transfer students after one semester of enrollment in a four-year institution?
2. Is there a statistically significant relationship between grit and social integration among vertical transfer students after one semester of enrollment in a four-year institution?
3. Is there a significant difference in grit depending upon GPA (2.0 and above vs. 1.99 and below) for vertical transfer students at the end of their first semester in a four-year institution?

The purpose of this chapter is to provide a foundational overview of the related literature and a conceptual framework for this study. Focus is placed on reviewing the literature with respect to non-cognitive variables and student academic performance and social integration experiences within the four-year setting.

Literature Review

To determine the relationship between grit, academic performance, and social integration in vertical transfer students' first semester, it is vital to unpack and examine each construct. In the first research stream, the concept of academic performance is reviewed, with a focus on academic readiness, the transfer shock phenomenon, and the relationship of Tinto's (1988) theory of integration to the vertical student experience. The second stream examines the origins of grit, the work to introduce and validate it as a construct, and the findings/positive associations between grit, academic performance, and goal completion. In the third research stream, social integration is examined through an exploration of institutional practices and student engagement activities and opportunities. These three streams form the conceptual framework of the study of the relationship between vertical transfer students' grit, first-semester academic performance, and social integration (see Figure 2).

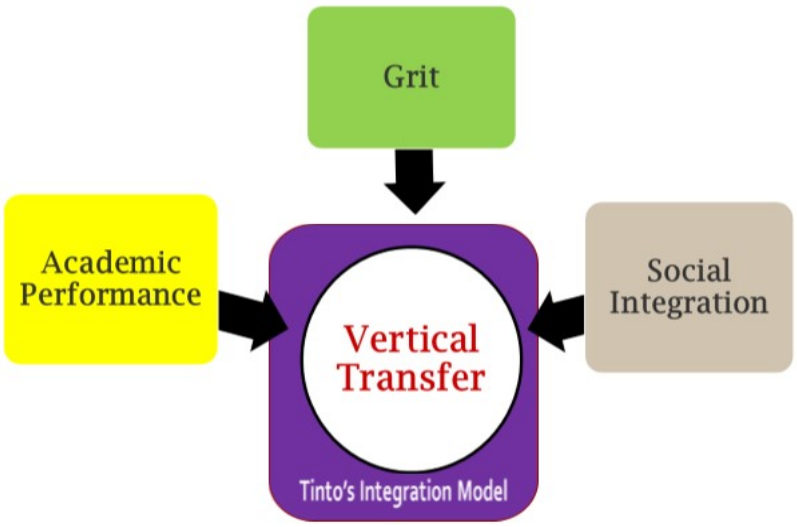

Figure 2. A visual guide to the three streams of research and seminal authors guiding this research.

Tinto's Integration Model

Tinto (1988) observes that "new students are left to make their own way through the maze of institutional life […] they have to 'learn the ropes' of college life largely on their own" (p. 446). Vertical transfers face this challenge more often than native students because they must first learn the ropes at a two-year institution and then, after choosing to transfer, they must learn the ropes for an entirely new setting. Tinto (1988) cautions that not all new students are able to navigate this integration independently. Underpinning this model is the assumption that integration is the key to students integrating into a college setting. In this model, integration means duality in that Tinto addresses both academic and social integration. Tinto's integration model is part of the conceptual framework for this study because it provides a perspective for understanding the intellectual and emotional shifts vertical transfer students must undergo in their transition into four-year institutions. Tinto's (1988) theory, originally aimed at understanding student retention and departure, remains one of the most influential with respect to the study of transfer student behavior. Tinto (1988) asserts that academic and social integration is vital to acclimation and transition for the following reason:

> Having begun the process of separating themselves from the past, new students have yet to acquire the norms and patterns of behavior appropriate to integration in the new communities. They have not yet established the personal bonds which underlie community membership. (p. 444)

Tinto's (1988) research reveals that some students are unable to cope with the uncertainty, stress, and demands related to integrating into a new environment. Some students "flounder and withdraw," while others "stick it out even under the most severe conditions" (p. 444). In this way, Tinto's (1988) research parallels Duckworth et al.'s

(2007) work on grit, which sought to label and define a non-cognitive trait attributed to individuals who identify a goal and persist until it is met.

Generally speaking, vertical transfer students who are determined to integrate and transition into the four-year setting will do so. Tinto's (1997) work made it clear that "how" they do so is not necessarily a prescribed, linear path. He presents support for two dimensions of integration – academic and social. Academic integration occurs when students engage in on-campus classroom learning, academic activities, and learning experiences. Social integration involves peer interactions, social connections, and engagement in activities outside the classroom. While it may appear that the dual aspects of integration are individual constructs, Tinto (1997) recommends another view, claiming, "a more accurate representation would [be if] academic and social systems appear as two nested spheres, where the academic occurs within the broader social system that pervades campus […] social communities emerge out of academic activities" (p. 619). Strauss and Volkwein's (2004) research supports Tinto's nested metaphor; they observe that "classroom experiences are the basis for forming supportive community environment" (p. 220). Academic and social integration operate in a pseudo-symbiosis, with students transitioning in and out of them continuously during a day on campus.

Tinto's theory is useful to the conceptualization of this study because it examines an essential aspect of the transfer experience – integration – and the intersection between integration and engagement. Tinto identifies academic preparedness, integration, and general acclimation as obstacles transfer students face along the transfer pathway. In fact, the terms academic and social integration "have almost become synonymous with student retention," and yet more work and research is needed to understand the factors and

variables inherent to transfer students and how they directly affect these students' engagement within the campus community (Tinto, 1998, p. 339).

While present research on transfer student success and transfer shock is plentiful in identifying underlying cognitive factors and presenting models like Tinto's, it has not yet moved higher education or practitioner action closer to mediating transfer concerns, such as those that pertain to specific factors impacting their experience (Hokanson & Karlson, 2013; Ishitani, 2008; Thurmond, 2007). The pervasive phenomenon of "transfer shock" highlights the need for an intentional shift toward non-cognitive aspects inherent in the vertical transfer experience. Duckworth et al.'s (2007) research on grit pulls back the curtain a bit and nudges researchers to dig more deeply to understand the motivating factors underlying the transfer experience.

Research connecting grit, academic performance, and social integration among vertical transfer students is not currently present in the literature, yet Tinto's work foreshadowed a potential connection between them. As a construct, grit has been actively studied in relation to freshman, older, and military students, but a connection with transfer students remains elusive in the research (Bowman, Hill, Denson, & Bronkema, 2015; Duckworth & Gross, 2014; Duckworth et al., 2007). Thus, this study attempts to fill in what has been missing since the inception of the "transfer pathway." The study contributes to the ongoing dialog regarding how to support transfer students during their first semester of matriculation and positively impact their retention and success. Understanding how grit, academic performance, and social integration intersect with students' first-semester outcomes will directly impact and assist four-year institutions in

shaping new transfer pathways that holistically support transfer students during their first semester to positively impact retention and success data.

Fann (2013) notes that the complexity of the transfer pathway, along with individual student characteristics that shape how vertical transfer students handle their first semester, ultimately impacts students' retention and degree completion. As Astin (1975) observes, "The difficulties of socialization and adjustment for the transfer student are apparent" (p. 154). While supported by the research and transfer student degree completion, Astin's (1975) observation appears to be a repetitive refrain on most campuses, with no immediate end in sight. An opportunity exists to push beyond the cognitive lens and potential readiness biases four-year institutions harbor toward vertical transfer students, and to change the conversation by identifying how the vertical transfer first-semester experience can be shaped and improved by considering the role grit plays in their academic performance and social integration.

Academic Performance

Academic readiness. Four-year institutions often administer campus-specific placement tests that utilize their own individual rubrics and standards. Such placement tests may be different than any utilized at the community college level, which can lead to a disconnect between vertical transfers' perceived level of academic readiness and the four-year institutions' determination of the students' actual level of readiness (Boswell, 2004). After admission and testing, students may encounter fiscal obstacles in the form of federal and state financial aid regulations and a deficit of need-based funding availability, as many institutions have moved to merit-based funding models (Boswell, 2004). Vertical transfers often encounter a sense of obsolescence, as institutions' ability to

longitudinally track the vertical transfer experience from departure from a two-year setting to arrival at a four-year setting is limited because collaborative databases are not established to communicate interdependently. Therefore, students are not able to access or view any historical data on their collective progress other than by viewing disparate academic transcripts (Fain, 2012). Creating a clearer pathway from the community college setting to the four-year setting that incorporates transparent advice, stresses the importance of being prepared, and promotes academic rigor would positively improve African American students' perceptions of the transfer experience (Wilson, 2014). Despite IPEDS recommendations and mandatory reporting of transfer retention and graduation data as of the 2015-16 academic year, data on vertical transfers remains scarce and is typically not shared across campuses with all stakeholders (Marling, 2013). This lack of consistent and accurate data on vertical transfers, especially minority transfer students, prevents institutions from creating and enacting effective campus-wide retention initiatives (Spittle, 2013).

Transfer students have concerns about their ability to be academically successful and prepared for the four-year environment, and the literature suggests they may have reason to be concerned. Johnson (2005) reports that approximately two-thirds of the studies comparing native and transfer student grades concluded that native students perform better than transfer students. Laanan (1996, 2001) notes that the differences between academic rigors, competition among class peers, and institution size and location explain why some transfer students struggle with transition into a four-year setting. Could transfer students' academic performance fall short due to their fears of the academic rigor ahead, or due to their self-imposed self-reliance during their first semester? Townsend

(1995) posits that transfer students adopt a self-reliant attitude and approach because they feel their four-year institution does not fully communicate with them; they opt to take matters in.to their own hands. Rendon (1992) states, “Community colleges are the institutions where minority and low- and medium-income students are concentrated” (p. 6). In his 1989 address, Adelman asserted that bachelor’s degrees represent something much larger than merely an accomplished program of study:

> The bachelor's degree is the mass benchmark of educational attainment after high school. It is a culturally visible symbol with significant power in public policy. No Congressional committee, for example, asks the U.S. Department of Education for trends in the production of associate degrees. (p. 29)

In spite of this observation, institutions demonstrate reluctance to enroll transfer students based upon internal concerns that students leaving community college settings are not academically prepared for the rigor of the four-year setting and will have a harder time adjusting (Laanan, 1996). Paradoxically, the literature reveals that institutions also share a pervasive view that vertical transfer students, having been part of a higher education system previously, arrive able to navigate the complexities and decisions needed to determine a logical degree path exists. Such views are usually inaccurate and result in students feeling confused and indecisive when confronted with vital degree pathway decisions (Rosenbaum et al., 2006). In this regard, a general view that transfer students as a cohort are more complicated to work with than traditional first-year-entry students survives (Poch & Wolverton, 2006). The ability for faculty, staff, and administrators to counter or dispel myths and mediate such perceptions is often diminished by the absence of both accurate national data on transfer student success and internal campus communication about the cohort, resulting in a lack of foundational information to refute these longstanding mental models (Marling, 2013).

Viewing transfers as one universal cohort diminishes the diversity and experiences transfer students bring to a four-year setting and does not acknowledge the transitional challenge minority students undertake. Community college enrollment demographically mirrors the neighborhoods in which these institutions are located; therefore, minority students adjusting into four-year settings are often transitioning into less diverse environments (Cohen & Brawer, 2008). Differences in students' backgrounds and individual preparation for rigor in four-year settings often cloud the bigger issue – that is, the ways vertical transfers integrate (or do not) academically and how critical the experience is to their sense of connection, determination, and time-to-degree.

Transfer shock. Hills (1965) first coined the term "transfer shock" to describe the temporary phenomenon of GPA performance of transfer students dropping during their first one or two semesters after transferring into a four-year institution. Research from the 1960s through today remains consistent regarding the existence and phenomenon of "shock," but no clarity or agreement is apparent regarding the depth or intensity of "shock" or the true causes of this phenomenon (Thurmond, 2007). In spite of the "shock" label, literature shows that students who transition from a two- to a four-year institution do as well as, if not better than, their peers who matriculated directly into the four-year setting (Handel, 2013a). Bowen, Chingos, and McPherson (2009) support this finding, noting that transfer students are more likely to do better than their "home grown" peers.

Since the construction of the transfer pathway, suspicion about whether two-year institutions adequately prepare students to transition into four-year settings has existed. Yet, with transfer students ultimately performing as well as or better than their peers

academically, questions arise as to what other factors outside cognitive ones may be at play. Little focus has been applied to four-year settings to determine the reflexive responsibility they might have in helping students transition into the four-year setting (Susskind, 1996). As Berger and Malaney (2003) note, many students do not experience a successful transition, and for them the process of adjusting to four-year settings is neither easy nor smooth. Researchers and institutional leaders often cite transfer students' high academic achievement and standing following a period of transition; such emphasis on the endpoint results gloss over the pathway barriers, and perhaps even difficulties, transfer students experience along the way (Handel, 2013a). It is precisely the "gloss over" aspect of the literature that calls for a true examination of the barriers or difficulties, specifically to uncover what elements may cause these challenges for vertical transfer students, so institutions may begin to restructure pathways that focus on students' holistic experiences and maximize their success continuously, rather than simply at the end of their academic careers.

Grit

Pritchard and Wilson (2003) note that successful completion of a college degree is regarded as vital for both individuals' and society's success. As four-year institutions are the pathway through which vertical transfer students achieve this success, the longstanding lens for defining and measuring success in four-year settings is sorely in need of recalibration. Camara and Echternacht (2000) note that high-school grades and standardized test scores have proven to be valid predictors of first-year GPAs. It is also important to note that admissions pathways for vertical transfer students include similar data standards, so the question remains as to the efficacy of using them with vertical

transfers. Akos and Kretchmar (2017) caution that these traditional predictors of success contain inherent limitations since they are attributed directly to 25% variation in first-year GPA scores only, leaving the remaining 75% variance unclear. This gap indicates that such standards do not represent a student's full story, and of greater concern is whether such standards, traditionally applied to first-time, full-time students, represent the full story for vertical transfers. Notwithstanding vigorous debates over what comprises the 75% variance in GPA performance and measures of intelligence, more is known about human IQ than any other human difference, which implies there is room for further exploration (Duckworth et al., 2007).

Sternberg, Bonney, Gabora, and Merrifield (2012) advocate for non-cognitive measures in admissions processes because they conceptualize "intelligence as a multi-dimensional construct inclusive of creativity, wisdom, and analytical and practical intelligence" (p. 164). Akos and Kretchmar (2017) note that, contrary to traditional measures of IQ and SAT scores, Duckworth et Al. (2007) demonstrate that "the construct of grit, broadly defined as perseverance and passion for long-term goals [is] shown to predict a variety of achievement outcomes above and beyond traditional measures" (p. 165). When viewed through the lens of grit, students' social integration and academic engagement levels and commitment to the university stands as a prevailing focus of concern that falls outside any cognitive measures (Tinto, 1975). Such a view, distinct from any traditional cognitive standards and predictors, invites a focus on non-cognitive qualities – the individual variables related to students' assimilation into college life – from both admissions and student success perspectives (DeWitz et al., 2009). In particular, this research study examines the non-cognitive quality of grit because it

"predicts an impressive set of real-world markers of motivation and perseverance" (Silvia, Eddington, Beaty, Nusbaum, & Kwapil, 2013, p. 200).

Grit is a contemporary construct, but its roots extend back more than 150 years. Akos and Kretchmar (2017) point out that pursuit of "why some people achieve their highest potential while in others it's left untapped" drove the early research of renowned individuals like William James, Sir Francis Galton, and Lewis Terman (p. 165). Duckworth et al. (2007) highlight that the roots of today's grit first took hold when Galton (1892) studied biographical details of many prominent and established community members, including artists, writers, and statesmen, concluding that one commonality among their stories was that ability alone did not bring about their success. Galton (1869) contrasted self-denial when faced with temptation against zeal and capacity for hard labor. The successful individuals he studied were able to not give in to short-term temptations or distractions, instead continuing on toward their broader goals.

Cox (1926) later built upon Galton's initial findings with an in-depth review of over 300 biographies, representing many learned and successful individuals considered geniuses, which he had culled from J.M. Cattell's (1903) biographical collection. Cox's (1926) findings indicated that specific traits documented in these individuals' childhood biographies were predictors of achievement: "persistence of motive and effort, confidence in their abilities, and great strength or force of character" (p. 218). Agreement regarding these traits remained elusive until the 1930s, when Ryans (1939) stated that "the existence of a general trait of persistence, which permeates all behavior of the organism, has not been established, though evidence both for and against such assumption has been revealed" (p. 737). While IQ measures remained the initial

qualification for success and therefore served as the litmus for creation of the samples that Galton, Cox, and Ryans studied, the literature reflects a common finding among these early research endeavors – the predictive qualities that determined future success and accomplishment were non-cognitive in nature. Cox's colleagues, Terman and Oden (1947) recommended further research into this phenomenon, stating that high intelligence did not directly correlate to high achievement and urging, "What circumstances affect the fruition of human talent, are questions of such transcendent importance that they should be investigated by every method" (p. 352). Interestingly, despite data showcasing the role non-cognitive qualities played in the trajectory and success of eminent individuals in society, Gottfredson (1997) observed that intelligence has remained the most explored and documented predictor of achievement and, in turn, is one of the main factors in admission to higher education institutions.

Approximately 30 years after Gottfredson's (1997) observation, Duckworth et al. (2007) introduced both the term and construct of "grit," defining it as "perseverance and passion for long-term goals" (p. 1087). As Duckworth et al. (2007) envisioned grit as a distinct non-cognitive quality that supersedes concepts such as achievement, conscientiousness, and self-control, because gritty individuals identify long-term goals and continue to pursue them "over years despite failure, adversity, and plateaus in progress" (p. 1088). In essence, individuals who are gritty identify goals that may take time and considerable effort to attain and they are steadfast in reaching them. Duckworth et al. (2007) suggest that grit may be the missing link, or actual predictor, that illuminates what made eminent researchers like Galton, Cox, and Ryans study high achievers.

Duckworth et al.'s (2007) initial study establishing and validating the Short Grit Scale consisted of six studies using four samples:

1 & 2. Adults aged 25 years and older

3. Ivy League undergraduates

4. West Point cadets from the Class of 2008

5. West Point cadets from the Class of 2010

6. National Spelling Bee finalists

Consistent across all six studies was that individuals' self-reported grit scores were more positively associated with their successful achievement than their IQ data. Duckworth and colleagues utilized a single 12-item scale that reflected a broad total score of grit and showed findings indicating that the grit score was comprised of two related facets: 1) perseverance of effort, and 2) consistency of interest. Strayhorn (2008) affirmed Duckworth et al.'s (2007) finding that grit positively predicts achievement and grade attainment in college over and beyond measures such as talent, IQ, or aspirations, but did not expand upon these two facets. Duckworth and Quinn (2009) subsequently used data from the 2007 study to create a shorter 8-item self-report survey that incorporated both facets to capture the total score along with subscale totals. They found that "consistency of interest predicted significantly more variance in career changes […] but perseverance of effort was a stronger predictor of GPA" (Bowman et al., 2015, p. 640).

Silvia et al. (2012) sought to understand from a biological perspective how grit predicts or influences nervous system response during challenging tasks. They explored how the theory of motivational intensity during tasks impacts successful outcomes in gritty people. Motivational intensity theory states that "effort is a function of two factors:

the importance of success and the perceived difficulty attaining the goal" (Silvia et Al., 2012, p. 200). While Duckworth et al. (2007) noted that gritty people are more passionate about goals and dedicated to achieving them, Silvia et al. (2012) posited that gritty people value or prioritize success more highly than less gritty people. Silva et al.'s (2012) experiment revealed that people who scored high on the subscale of perseverance appraised tasks as more important, whereas participants who scored high in consistency did not value these tasks as important.

Literature covering studies of multiple settings indicates that personality factors play a crucial role in both the quality and outcome of human performance (Duckworth et al., 2007; Maddi, Matthews, Kelly, Villarreal & White, 2012; Silvia et al., 2013). Maddi et al. (2013) analyzed performance and retention data for United States Military Academy (USMA) cadets using the whole grit score, not the subscales. The authors found that cadets who completed academy training were twice as likely to a have a higher grit score than fellow cadets who dropped out. Bowman et al. (2015) also conducted a study using three samples of undergraduate students from two universities to examine grit dimensions and their relationship with student outcomes. They found that perseverance of effort, and not consistency of effort, was a stronger predictor for both academic and non-academic outcomes. In particular, perseverance of effort predicted positive changes in GPA over the length of a student's college career.

While the literature on grit is consistent and encouraging since it has identified a positive relationship between grade achievement (as measured by GPA) and retention with respect to underclassmen, young adults, and military cadets, it remains non-existent with respect to transfer students. In fact, no studies that explore grit's relationship to

vertical transfer student academic or non-academic outcomes have been identified. Fitzgerald and Laurian-Fitzgerald (2016) suggest that vertical transfer students "stay with their efforts [because they] have a purpose for their efforts," namely undertaking a paradigm shift from a two-year setting and adjusting to a four-year setting in order to achieve a bachelor's degree (p. 57). This point begs the question, if grit positively predicts that individuals will persevere and reach their goals no matter the obstacles, how gritty are vertical transfer students?

Social Integration

Underpinning vertical transfer students' dedication to staying with their effort is the climate of the academic environment and the relationships forged within it. In this regard, social integration is a stronger predictor of persistence than just academic performance (Braxton, Sullivan, & Johnson, 1997). Braxton, Jones, Hirschy, and Hartley (2008) take this point one step further, stating that the higher a student's level of social integration, the higher his or her level of commitment to the university. Four-year institutions and transfer students alike are presently navigating a pipeline that has not been serviced to ensure what is being provided to facilitate social integration and acclimation that is logical, applicable, and useful in bolstering students' integration and commitment (Townsend & Wilson, 2006). The desire to achieve a baccalaureate degree is a common goal for students, whether native or transfer, but past this point of mutual agreement, the practices institutions use to welcome and aid students in social adjustment and the actions students take to integrate socially vary widely (Townsend & Wilson, 2006).

Research indicates that students who are emotionally and social healthy are more

likely to succeed in college (Leafgran, 1989). Environment plays a central role in defining students' experiences, and students who achieve positive levels of emotional and social health do so in supportive environments (Ghusson, 2016). According to Pascarella, Smart, and Ethington (1986), social integration encompasses more than just connections with peers, extending to interactions with faculty and staff members, as well, giving integration both an individual and group construct. Vertical transfer students struggle to form social connections and make friends during their initial adjustment period; some students indicate their challenge with social connection extends even beyond their initial one or two semesters (Townsend & Wilson, 2006).

Well-being and connection. Braxton and McClendon (2002) note Schuh's (1994) reference to Chickering and Reisser's assertion that "college attendance requires social, emotional and academic adjustments" (p. 66), claiming that stress is a consequence of these adjustments. Such a consequence is often amplified for vertical transfer students, who are effectively "starting over again academically and socially" in a four-year setting (Gawley & McGowan, 2006, p. 14). Schlossberg's (1989) work with adult students transitioning into college presented a similar consequence in the observation that "people in transition often feel marginal and that they do not matter" (p. 6). A sentiment Baumeister and Leary (1995) affirmed with their thesis concerning belongingness and its role within human nature, stating that "human beings are fundamentally and pervasively motivated by a need to belong" (p. 522). Belongingness is also a consistent thread in the literature on adolescents and first-year college students; with these cohorts, the term connotes an organic and intentional connection, a sense that

individuals matter and are of value within their environment (Freeman, Anderman, & Jensen, 2007; Hausmann, Schofield, & Woods, 2007; Marshall, 2001).

Lester (2006) supports Chickering and Reisser's (1993) research, focusing on first-year college students with the idea that transfer students experience stress during their adjustment into the new campus climate/culture, as well. It is important for institutions to consider the interrelatedness of vertical transfer students' social integration and feelings of acclimation and their well-being from the perspective of social health and behaviors (Pritchard & Wilson, 2003). Transfer students may experience anxiety and/or stress from the demands of adjusting to a new environment, which is important to consider, as stress can influence both individual behavior and academic performance (Pritchard & Wilson, 2003).

Eggleston and Laanan (2001) highlight that "racial and ethnic minorities encounter additional stressors during transfer" (p. 53). Despite this fact, Latina/o students demonstrate particular resiliency in navigating their educational choices with little to no parental guidance to assist them with the transition into a four-year setting or in navigating the path to graduation (Zalaquett, 2006). Zalaquett (2006) notes that these "students' parents supported their children's educational aspirations, but they have no experience with higher education" (p. 38). Focus on student choices and the motives behind them is becoming more essential, as research notes that perseverance, persistence, and grit appear to be indicators for success and achievement. Therefore, identifying and supporting vertical transfer choices and behaviors could reap positive benefits in mediating transfer shock (Hokanson & Karlson, 2013).

Student pathways. Rodriguez-Kiino's (2013) qualitative study of 75 transfer students who transitioned from the California Community College system to Pacific Coast University reflected that the students perceived the transfer experience to be "a rocky transfer pathway" (p. 9). Post-admission transfer students relate feeling a sense of anonymity and a lack of connection to the campus and their peers, sharing that they find it challenging to make friends, which may be attributed to or reinforced by their perception of the pathway (Townsend & Wilson, 1996). Students also admit to finding the transition experience "an awkward fit" at first (Townsend & Wilson, 1996). Transfer students often acknowledge their awareness of or belief in a "stigma" concerning the difference in academic challenge between two- and four-year settings; two-year settings are at times viewed as "minor league" experiences (Chin-Newman & Shaw, 2013). The spectrum of transfer students who appear to be savvy and knowledgeable about where to go for information and/or what questions to ask is wide, with many students feeling they are not "savvy" and therefore are not successfully managing the transition (Fann, 2013).

Transfer students struggling to manage the transition into the four-year setting may struggle due to the academic and social expectations they formed prior to matriculating (Tinto, 1987). Tinto (1987) observes that events such as orientations "go beyond the provision of information per se to the establishment of early contacts for new students […] with other students, faculty and staff of the institution" (p. 147). Emphasis on and prioritization of mandatory TSO programs and activities within the transfer pathway could serve to remediate the anonymity factor, as researchers argue that institutions should lead students to crucial resources instead of just hosting them (Townsend & Wilson, 2006). Transfer students generally value establishing ties to the

institution through academic support structures, as they perceive these structures to offer a desirable means of engagement, as opposed to focusing on opportunities for social support (Lester et al., 2013).

Student practices. By and large, transfer students demonstrate varying patterns of engagement and involvement from their traditional first-year counterparts (Wang, 2009). Transfer students may arrive with external obligations such as work commitments or family responsibilities that impact their time and interest in engaging within the four-year environment (Wang, 2009). For many vertical transfers, "going to college is but one of a number of tasks to be completed during the course of a day" (Tinto, 1997, p. 614). Tension exists between transfer student obligations and their interest in and ability to get involved within the four-year setting because there is a direct positive correlation between students' involvement in institutional life and their degree of learning and skill development (Tinto, 1997). The literature reflects that transfer students in approaching their transition often display behavior that is both over- and under-confident, depending on the setting (Grites & Farina, 2012). Interestingly, research shows that transfer students often eschew programs and services aimed at assisting them with transitional support, such as orientations and optional seminars (Grites & Farina, 2012). As Tinto (1997) observes, "the classroom may be the only place where students and faculty [and peers] meet"; with respect to transfer students, limiting interaction with peers and faculty to class could be by choice or necessity (p. 599).

Disassociation from programs and services and reliance on classroom interaction often creates what Grites and Farina (2012) term the "invisibility of the peer group," specifically the transfer cohort, as new transfer students opt to simply arrive to campus to

begin classes and never experience events where they are directly introduced to other transfers; the cohort is essentially invisible to one another, yet experiencing a similar transition (p. 1). While Grites and Farina (2012) observe this "invisibility" phenomenon, research specific to minority students and their transfer adjustment has observed that "students of color are interested in pursuing interactions with faculty who can serve as support persons" (Wawrzynski & Sedlacek, 2003, p. 497). Fischer's (2007) mixed-methods study of approximately 4,000 students similarly reflects Grites and Farina's observations, noting that students, regardless of ethnicity and race, demonstrated more satisfaction and persistence when they had established social connections with faculty, staff, and peers. This finding complements Tinto's (1997) finding that "students are influenced by participating in a setting in which sources of learning come from a variety of perspectives" (p. 613).

Consistently, Zalaquett (2006) found that Latina/o students value creating connections with faculty members and establishing interpersonal relationships with peers as integral to their educational experiences. Such connections aid students in connecting course content and activities to their own personal experiences, thereby enabling them to recognize the diversity of experience among their peers (Tinto, 1997). Wang (2009) notes that the creation of meaningful or significant connections with a four-year campus – whether it is through faculty or peers – promotes and bolsters retention and degree-attainment rates. Tinto (1997) observes that students put more effort into activities that bridge the academic-social divide, which enables them to concurrently create peer relationships and learn. From this effort and engagement, social communities emerge that help connect transfer students more directly to their four-year setting (Tinto, 1997).

In spite of the fact that transfer students may not wish to associate with transitional services and support measures, they must still deal with the red tape and bureaucratic elements inherent in transitioning out of a two-year setting into a four-year setting by researching the institution and the policies, procedures, and programs directly applicable to their academic goals (Chin-Newman & Shaw, 2013). Guidance in making the best navigational decisions concerning academic programs and goals often ends up being insufficient at worst and self-initiated at best (Handel & Williams, 2013). Rosenbaum and colleagues (2006) characterize the dilemma facing transfer students this way:

> First, students must be aware of what kind of help they need and when they need it. Second, they must be informed about how and where to get it. Third, they must actually go get it. Fourth, students must seek this information well in advance. (p. 119–120)

Transfer students find themselves in the role of voyagers in a sense, transitioning from one campus culture and environment to another, often without a clear map to guide them. Awareness on the part of both students and their sending/receiving institutions of the differences and inherent decisions they will need to navigate would mediate the pathway experiences transfer students encounter.

Summary

This chapter examined three streams for this quantitative research study: academic performance, grit, and social integration. It also provided a re-introduction to the guiding questions for the study and the conceptual framework upon which the study was built. Vertical transfer students continue to be a dominant and vital enrollment resource for four-year institutions. In spite of the longstanding acknowledgement that transfer students often experience shock and struggle to adjust during their first semester,

research indicates a lack of progression toward a holistic understanding of the challenges transfer students face. What is prevalent in both the literature and today's transfer practices is attentiveness towards cognitive variables and traditional quantifiable measures of academic performance. The lack of awareness and research on non-cognitive variables, or personal qualities that may influence the vertical transfer experience, provided the impetus behind this research study. This study shifts attention toward the role grit may play to provide institutions with a means of considering and approaching the academic and social adjustment and retention needs of their vertical transfer student population in a holistic, intentional manner.

Chapter 3: Research Methodology

This chapter provides an overview for the research design used in this study, conveys the research questions critical to the study, discusses the purpose of the study, and catalogs the independent and dependent variables analyzed. The chapter then provides a description for the site from which the archival data was collected, reviews the sampling plan and population, and pairs each research question with the statistical techniques used to analyze it. Finally, the chapter concludes with a description of the data-collection process, an overview of the completed data analysis, and a simple description of power analysis.

This study was quantitative in nature, focused on the relationship between vertical transfer students' grit, academic performance, and social integration in their first-semester experience within a four-year setting. Specifically, the students' self-reported Grit-S scores were compared with several dimensions, including semester and cumulative GPA, semester-to-semester persistence, Canvas activity, and OrgSync platform activity.

Purpose and Research Questions

The purpose of this quantitative study was to examine the relationship between vertical transfer students' grit, first-semester social integration, and academic performance. The study was guided by the following research questions:

1. Is there a statistically significant relationship between grit and academic performance among vertical transfer students after one semester of enrollment in a four-year institution?

2. Is there a statistically significant relationship between grit and social integration among vertical transfer students after one semester of enrollment in a four-year institution?
3. Is there a significant difference in grit depending upon GPA (2.0 and above vs. 1.99 and below) for vertical transfer students at the end of their first semester in a four-year institution?

Research Design and Rationale

This study employed a quantitative non-experimental research design. Quantitative methodology was appropriate for this study because it "explains phenomena according to numerical data" (Yilmaz, 2013, p. 311). Data were collected and analyzed to determine the relationship between the independent and dependent variables. The study was retrospective, meaning the data was sourced from archival institutional data. Fall 2015 data on self-reported grit surveys, academic performance, and social integration data from the university's Canvas system, OrgSync platform, and Office of Institutional Research (OIR) was utilized to present comprehensive retention and performance results for the sample during their first full semester of enrollment within a four-year institution.

Methodology

Stages of Data Collection

Creswell and Clark (2007) view time and resources as major concerns in quantitative, qualitative, and mixed-methods paradigms. Data collection was initiated following successful completion of the Institutional Review Board (IRB) approval process for the study site and Drexel University's IRB Letter of Reliance (LOR) process. Table 1 guided the progression of the study.

Table 1

Research Timeline

Activity	**Date**
Proposal defense	Fall 2016
Drexel IRB certification	Winter 2017
Grit-S surveys collated and entered in to database	Winter 2017
Institution- and student-level data collection	Winter 2017
Data merging	Winter 2017
Data interpretation	Winter/Spring 2017
Report findings	Spring 2017

Sample and Sampling Method

Sample. Surveys collected from students who had vertically transferred from out-of-state community colleges during Fall 2015 were excluded from this study to focus on vertical transfer students who completed an associate degree within the state. In addition, the following characteristics were excluded from the population: students over the age of 25, which is the cutoff denoting traditional vs. nontraditional students at the university; and students admitted via special admissions processes (student athletes, Knowledge is Power Program [KIPP] participants, veteran/military students, adult learners, and Educational Opportunity Fund [EOF] students), as such programs have different

admissions standards and offer transfer adjustment services. Therefore, the sample for this study included 405 vertical transfer students who completed grit surveys distributed by the office of the Director for Enrollment Management Data and Technology between April and August 2015.

In Fall 2015, the VTR cohort at the university was comprised of 405 students (*N*=405). Institutional research data indicates that this cohort ranged in age from 18 to 25 years old, with an average age of 23 years old. The university housed a residential population of 5,200 students (40% of all enrolled students) during Fall 2015. Thus, the VTR cohort students comprised 5% (*n*=288) of the university's overall residential population. Over half of the participants in this study were female (60.7%, *n*=246). There were slightly more White/Asian (53.9%, *n*=193) participants compared to minority students (46%, *n*=165). The vast majority of the sample were commuters (88.4%, *n*=358). There was also a nearly 50% split between Associate of Arts (AA) and Associate of Science (AS) degrees. See Table 2 for all sample demographics.

Table 2

Demographics of the 2015 VTR Cohort

	Frequency	**Percent**
Gender		
Female	246	60.70%
Male	159	39.30%
Race		
White/Asian	193	53.90%
Minority	165	46%
Associate Degree Earned		
Associate of Art (AA)	199	49.10%
Associate of Science (AS)	206	50.90%
Residential Status		
Commuter	358	88.40%
Residential	47	11.60%

Sending institution. The study site was located in New Jersey, which is home to 19 two-year community colleges (*U.S. News & World Report*, 2017). At the time of the students' Fall 2015 admission to the university, members of the VTR cohort hailed from 84% of the in-state community colleges (see Figure 3).

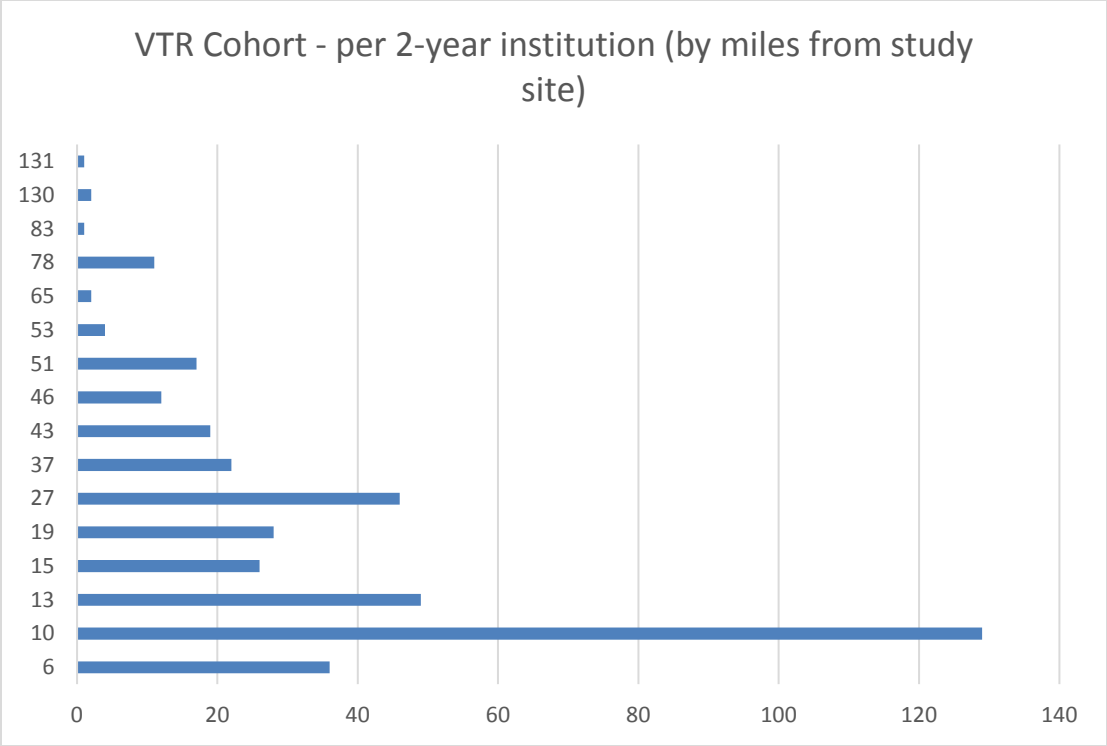

Figure 3. A graph of VTR cohort per two-year institution (by miles from study site).

Site. This study utilized archival survey and student information collected within a mid-sized public research university. The university's two main divisions work collaboratively to support the student experience: Academic Affairs and Student Affairs. As of Fall 2015, more than 20,000 students were enrolled at the study site; approximately 15,000 were undergraduates and 4,000 were graduate students. The university enrolled 1,343 transfer students during Fall 2015. The complete transfer cohort included 60 freshman transfers with fewer than 28 earned credits, 683 transfers who had earned college credits but no degree or had earned an Associate of Applied Science (AAS) degree, and 600 vertical transfer students. Of the 600 vertical transfers, 405 had completed an AA or AS degree (67%), and the remaining 195 students (33%) had

completed an Associate of Fine Arts (AFA) degree or had transferred to the university with an associate degree from a school outside New Jersey. The 405 students identified as part of the VTR cohort maintained an average sending GPA from their two-year institution of 3.24. As of Spring 2016, the university was also recognized as an HSI, since its undergraduate population exceeded the minimum standard of 25% Hispanic students in Fall 2015.

Site access. In this study, the researcher was considered a "backyard researcher" since she was an employee of the university in which the study was conducted. In accordance with using archival data involving human subjects from within the researcher's institution, IRB approval was sought and given. Then, approval was sought via a LOR from Drexel University to permit the researcher to conduct the study at her place of employment. Once the LOR was approved, the researcher moved forward with the study.

Instrumentation and Procedures

To examine the relationship between vertical transfer students' grit, academic performance, and social integration during their first semester of enrollment, the researcher utilized archival university- and student-level data from the following sources: cataloged Short Grit Scale (Grit-S) surveys, aggregate OIR student persistence data, Canvas course activity, OrgSync platform activity from the Center for Student Involvement, and aggregate student data from the university's Ellucian Banner system.

Grit. The Short Grit Scale was developed by Duckworth and Quinn (2009), who note in their research that "grit entails the capacity to sustain both effort and interest in projects that take months or even longer to complete" (p. 166). The instrument is

comprised of eight items that measure two aspects of grit: (1) perseverance of effort, and (2) consistency of interests. The instrument is a 5-point Likert scale ranging from 1 ("very much like me") to 5 ("not like me at all"). Scores for respondents are calculated by averaging the responses to all eight items. Duckworth and Quinn (2009) recorded alphas, meaning the probability of making a Type I error, for Grit-S that range from .73 to .83, suggesting acceptable internal consistency. Data from this instrument were applied toward addressing research questions 2 and 3.

Formal approval and permission from the Director for Enrollment Management Data and Technology was first obtained so the researcher could take and process the Grit-S survey forms. The forms were then collected by the director during the Fall 2015 transfer student orientation cycle, which occurred prior to the start of fall courses. The forms were collected from April to August 2015. Student identifier information was available in the form of students' campus IDs, but names were redacted to reduce the amount of sensitive data needed to conduct the study. Students' campus ID numbers were essential to the study, as they permitted the researcher to link students with the other data variables of interest in the study. Once processed, the Grit-S forms were stored in a locked file cabinet.

Once compiled, the Grit-S population database, which was created in Excel, was sent via a secure server, to the following offices on campus to build out the additional student demographic and analytic information needed to enter the data into the Statistical Package for Social Sciences (SPSS): Enrollment Management Data and Technology, Institutional Research, and the Center for Student Involvement. Once students' academic performance, Canvas activity, and OrgSync data were updated by the respective offices

and collated into one master database, the researcher entered the data into SPSS for analysis.

Academic Performance

Ellucian Banner. The following descriptive student variable data was reported from the Ellucian Banner system: ethnicity, gender, age, residential status, degree earned, sending institution, final GPA from sending institution, institutional semester GPA, earned credits – semester, earned credits – cumulative, credits not earned (due to failure or withdrawal), institutional cumulative GPA, and major program of study. Ethnicity reflected each participant's self-disclosed ethnicity of origin. Students' genders were noted as male or female according to their Banner system information. Sample participants may have originated from any of the 19 two-year institutions within New Jersey; therefore, participants' most recent sending institution was used for this study. The report also denoted degree earned as either an AA or AS for each participant. The four-year institution's GPA was calculated on a 0-4.0 scale; therefore, the semester GPAs also fell on that continuum. Upon matriculation, participants were studying under one of five colleges/schools within the university: College of Humanities and Social Sciences, College of Education and Human Services, School of Communication and Media Arts, School of Music, College of Science and Mathematics, and School of Business. As a result, participants' majors were listed along with their corresponding college/school. Academic performance data was categorical or continuous in nature and reflected as follows:

- **Categorical data:** Ethnicity, gender, degree earned, sending institution, major program of study

- **Continuous data:** Age, final GPA from sending institution, institutional semester GPA, institutional cumulative GPA, earned credits – semester, earned credits – cumulative, credits not earned (due to failure or withdrawal)

Student persistence data. The researcher worked closely with the Director of Enrollment Management Data and Technology to identify student persistence data for the study population. Specifically, the researcher requested Fall 2015 to Spring 2016 retention data for the VTR cohort. Student persistence data was classified as retained or not retained according to a nominal/categorical scale for the purpose of analysis.

Canvas. Canvas is the university's learning management system; thus, university course content and syllabus information is built in this electronic platform. Data regarding the VTR cohort's Fall 2015 curricular activities were extracted from the system using embedded analytics. Analytics focused on the following variables for each section: page views, ratio of time to page view, and time in course (per student). The researcher worked closely with the Director for Enrollment Management Data and Technology to obtain the report. Canvas data was measured continuously.

Social Integration

OrgSync. The university provides students, faculty, and staff a portal through which they can find and join organizations, stay connected to announcements and updates, and track their co-curricular involvement activities. VTR cohort activity in OrgSync was reported using the following variables: portal membership (yes or no), Greek life membership (yes or no), and student organization membership (yes or no). All variables were measured categorically. The researcher worked closely with the Associate

Director of Student Involvement within the Center for Student Involvement to obtain the portal data.

Data Analysis

Descriptive and quantitative analyses were performed for each of the three research questions in this study using Microsoft Excel and SPSS v23.0. See Table 3 for alignment between research questions, variables, and analysis.

Table 3

Research Questions, Variables, and Analysis Matrix

Research question	**Variables**	**Analysis**
Q1. Is there a statistically significant relationship between grit and academic performance among vertical transfer students after one semester of enrollment in a four-year institution?	IVs= Grit-S survey score (total and average) DV= GPA; Canvas: course activity, decile course activity, page views, decile page views, discussion board activity, late assignments, missing assignments	Pearson correlation
Q2. Is there a statistically significant relationship between grit and social integration among vertical transfer students after one semester of enrollment in a four-year institution?	IVs= Grit-S survey score (total and average) DV= OrgSync: organizational membership total, log-in activity; campus residential status	Pearson Correlation Point bi-serial correlation
Q3. Is there a significant difference in grit depending upon GPA (2.0 and above vs. 1.99 and below) for vertical transfer students at the end of their first semester in a four-year institution?	IVs: Grit-S survey score (total and average) DV= GPA: above 2.00, below 2.00	Independent *t*-test

Limitations

Zohrabi (2013) states, “Validity is a matter of trustworthiness, utility and dependability that the evaluator and the different stakeholders place into it” (p. 258). According to Onwuegbuzie (2000), “Every single study in the field of education has threats to internal and external validity” because no instrument can yield outcomes that are 100% reliable, nor can researchers eliminate all possible sampling errors from their population and sampling procedures (p. 8). Internal validity focuses on the efficacy of the study, meaning how well-designed the research study was and how effectively the changes in dependent variables can be attributed only to the independent variable. External validity refers to the degree to which a study’s findings can be generalized or applicable to other populations or settings. In an effort to shape future research on this subject, threats to internal and external validity are examined here in detail.

Threats to Internal Validity

In this proposed study, two threats to internal validity were acknowledged: history and mortality (attrition). History, or students’ prior academic and personal history, was a probable threat to this study because participants matriculated into the university with their own unique set of experiences, challenges, attitudes, and perspectives. Each participant’s background and experiences may have shaped his or her responses to the Grit-S survey, as well as his or her actions and decisions during the first semester of enrollment with respect to academic performance in class and social integration/activities. Mortality (attrition) remained another probable threat during this study. Participants that had completed the Grit-S survey prior to the start of the Fall 2015 semester may have elected to withdraw from individual courses and/or from all of their

courses during the semester, which would have excluded them from producing academic performance and social integration data.

Threats to External Validity

With respect to external validity, two threats were acknowledged: population validity and ecological validity. All incoming Fall 2015 transfer students were required to complete the Grit-S survey as part of the check-in process for their TSO event. For the purpose of this study, only the archived surveys submitted by vertical transfer students who met the additional population exclusions denoted above were used. As the sample was limited in this manner, there is a chance population validity may not be consistent with other institutions' vertical transfer populations. In addition to population validity, the fact that this study was conducted on vertical transfer students matriculating into a mid-size public four-year institution in a suburban setting presents a probable ecological validity threat, as well. The researcher acknowledges that the design of the study and the subsequent findings may not be generalizable or applicable to other institutional settings that enroll vertical transfer students. Considerations such as institutional type (public or private), size, and geographical settings, as well as information about sending two-year institutions, may contribute to ecological validity concerns when other institutions review the findings of this research.

Ethical Considerations

An ethical consideration the researcher needed to address was that the study was conducted at her place of employment. Thus, as a backyard study, the researcher acknowledged several potential ethical issues:

- Creation and implementation of the study had to be guided solely by the thesis and research questions, not influenced by any sociopolitical forces within the university.
- Careful determination of the roles that members within the researcher's unit played in support of the project was of utmost importance; participation by members of the unit was not required or coerced in any manner.
- Thorough and accurate review and evaluation of archival data was conducted to ensure that reporting reflected answers to the thesis and research questions only, in order to maintain the study's integrity.

The researcher was aware that archival data might contain confidential student information to which the researcher would not normally have access. She was also aware that disclosure of such data could place participants in a comprising position with university faculty/staff, as the data may present feedback that was sensitive in nature. One measure taken to protect students' confidentiality was the redaction of student names from all VTR cohort data files.

Summary

Through a non-experimental, quantitative study, data was gathered from several sources to create a comprehensive dataset. Specifically, archived Grit-S surveys and several university-level systems – Ellucian Banner, Canvas, and OrgSync – were utilized to obtain participant data. No participants were solicited or recruited for the study. However, due to the fact that student-level data and personal identification information was contained within the data, steps were taken to protect participants' confidentiality, including redaction of students' names from all data. Protocol measures were strictly

quantitative. Results were evaluated through the use of SPSS software. Ultimately, the data collected sought to identify the relationship between first-semester vertical transfer students' grit, academic performance, and social integration during their first semester of enrollment within a four-year institution.

Chapter 4: Findings, Results, and Interpretations

Purpose of the Study

The purpose of this quantitative study was to examine the relationship between vertical transfer students' grit, academic performance, and social integration during their first semester of enrollment within a four-year university setting. The study used a sample of first-semester vertical transfer students and examined the VTR cohort's self-reported grit scores in relation to dimensions of their first-semester academic performance, including semester and cumulative GPA, semester-to-semester persistence, and Canvas activity, as well as a dimension of their social integration, specifically their OrgSync platform activity.

Research Questions

To examine the relationship between grit, academic performance, and social integration during vertical transfer student's first semester of enrollment in a four-year university setting, survey data were collected using the Grit-S surveys, student-level Ellucian Banner, Canvas, and OrgSync; data were also obtained from OIR. The following three questions drove this research study:

1. Is there a statistically significant relationship between grit and academic performance among vertical transfer students after one semester of enrollment in a four-year institution?
2. Is there a statistically significant relationship between grit and social integration among vertical transfer students after one semester of enrollment in a four-year institution?

3. Is there a significant difference in grit depending upon GPA (2.0 and above vs. 1.99 and below) for vertical transfer students at the end of their first semester in a four-year institution?

Findings

Cohort Grit Scores

The Grit-S survey responses were tallied and analyzed for the VTR cohort (*n*=405). Descriptive statistics and a histogram (see Figure 4) were conducted to determine the percentile frequencies of grit within the cohort. The percentile results demonstrated the following average grit scores: 25th = 3.625; 50th = 4.00, and 75th = 4.375. Based upon the percentile data, three-fourths of the VTR cohort had a grit score of 3.6 or higher.

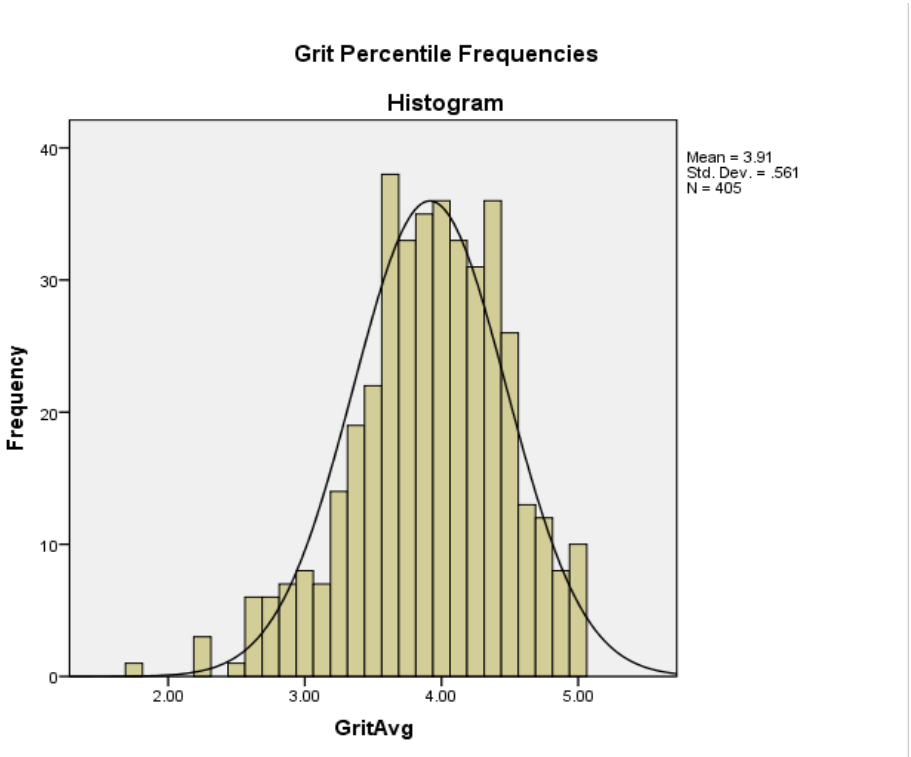

Figure 4. Grit score percentiles.

Grit and Academic Performance

A two-tailed Pearson correlation was conducted with data from the Grit-S survey forms and both the Ellucian Banner and Canvas systems (see Table 4). Correlations were only considered to be statistically significant if $p < 0.05$. Canvas data reflected n=400, indicating that five VTR cohort students had not actively engaged with an online course community. GPA data reported n=391, indicating that 14 VTR cohort students' final grades were not reflected in the Ellucian Banner system. The following specific variables were used in the matrix: Grit – total score and average score within cohort; Ellucian Banner – first-semester GPA; and Canvas – average course activity, decile course activity, average page views, decile page views, average discussion board activity, average late assignments, and average missing assignments. This assessment revealed a small but statistically significant negative relationship between total Grit score and average missing assignments (r=-.105). This correlation indicates that students with higher Grit scores were slightly less likely to miss assignments than those students with lower Grit scores. None of the other measures of interest were found to be significantly correlated with Grit scores.

Table 4

*Grit and Academic Performance Correlation Matrix (*n=*391-405)*

		1	2	3	4	5	6	7	8	9	10
1	GritTot										
2	GritAvg	1.000**									
3	CourseActivityAvg	0.02	0.02								
4	DecileActivityAvg	-0.01	-0.01	.403**							
5	PgViewAvg	0.09	0.09	.564**	.374**						
6	DecilePgViewAvg	0.08	0.08	.262**	.574**	.546**					
7	DBActivityAvg	0.09	0.09	.380**	.114*	.735**	.202**				
8	LateAssignAvg	-0.03	-0.03	.244**	0.07	.400**	0.05	.525**			
9	MissAssignAvg	-.105*	-.105*	0.05	-.129**	.187**	-.139**	.239**	.392**		
10	GradePercentAvg	-0.04	-0.04	0.02	0.07	0.08	0.07	.129*	-0.01	-0.06	

**Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)

Grit and Social Integration

A two-tailed Pearson correlation was conducted with data from the Grit-S survey forms and the university's OrgSync platform (Table 5). Correlations were only considered to be significant if $p < 0.05$. The following specific variables were used in the matrix: Grit – total score and average score within cohort; and OrgSync – organizational membership (number), log-in activity, and residential status (commuter or residential). OrgSync activity percentiles were also analyzed to determine frequency of engagement (log-in activity) within the sample. The following percentile results for OrgSync engagement were indicated: 25th = .00; 50th = 1.00, and 75th = 5.00. Based upon the percentile data, three-fourths of the VTR cohort had logged in once or not at all during the first semester of enrollment. Analysis of these data indicated that there were no significant correlations between Grit score and social integration.

Table 5

*Grit and Social Integration Correlation Matrix (*n=*405)*

		1	2	3	4	5
1	Organizational Membership Number					
2	Login to Org Portal Count	.628**				
3	Residential Status	.271**	.312**			
4	Grit Total	-0.072	0.025	-0.046		
5	Grit Average	-0.072	0.025	-0.046	1.00**	

***Correlation is significant at the 0.01 level (2-tailed)*

Grit and First-Semester GPA Performance Above or Below 2.00

The VTR cohort students were categorized into 2 subgroups: GPA at or above 2.0 or GPA below 2.0. An independent-samples *t*-test was conducted to see if there was a significant difference in Grit-S scores depending on GPA performance at/above or below 2.00. The VTR cohort subgroup with a GPA at/above 2.0 (M=3.91, SD=0.56) did not significantly differ from the subgroup with a GPA below 2.0 (M=4.00, SD=0.52) in terms of average Grit-S scores ($t(403)=0.89$, $p=0.373$, two-tailed). In practical terms, both subgroups reported an average level of "Agree" across the Grit-S survey items.

Chapter 5: Conclusions and Recommendations

According to federal education data, 81.4% of newly admitted two-year institution students indicate they intend to transfer and pursue a baccalaureate degree. However, data paints a rather telling disconnect between the students' stated intention to transfer and the realization that as little as 11.6% of two-year students transfer within six years (Kahlenburg, 2012). As such, this research focused on uncovering potential reasons for disconnection along the transfer pathway. In light of the fact that in the U.S., "a great challenge and an opportunity are at hand [since our] global competitiveness depends on a well-educated citizenry," furthering this base of knowledge is vital (21st Century Commission on the Future of Community Colleges, 2012, p. 5–6). Understanding the transfer student pathway experience, specifically how transfer students' non-cognitive skills relate to their experience, will serve to positively influence ways to bolster retention and graduation rates for the VTR cohort.

Summary of the Study

The purpose of this non-experimental quantitative study was to determine the relationship between vertical transfer students' grit, academic performance, and social integration during their first semester of enrollment within a four-year institution. Prior to designing the study, literature pertaining to the topic was reviewed and synthesized in Chapter 2. First, Tinto's integration theory (1988) was explored, with special attention paid to its relevance with the concept of transfer student transition. Then, academic performance was summarized from the vantage point of transfer student academic readiness and transfer shock. Next, the non-cognitive construct of grit was summarized.

Finally, factors affecting and mitigating transfer students' social integration were reviewed.

Following the review of current research, a non-experimental quantitative study was designed, as outlined in Chapter 3. Quantitative data was collected from 405 vertical transfer participants by way of archival Grit-S surveys that were distributed and collected by the Director of Enrollment Management Data and Technology. Comprehensive collection of data for the study entailed pairing the VTR cohort's Grit-S survey responses with university-level student data on each participant's academic performance and social integration activities. Data was obtained from the university's Ellucian Banner, Canvas, and OrgSync systems respectively and merged with the Grit-S data to create a master dataset. The VTR cohort and their corresponding data were analyzed using quantitative analysis methods. Descriptive statistics, Pearson correlations, independent *t*-tests and point bi-serial correlations were used to address the following research questions:

1. Is there a statistically significant relationship between grit and academic performance among vertical transfer students after one semester of enrollment in a four-year institution?
2. Is there a statistically significant relationship between grit and social integration among vertical transfer students after one semester of enrollment in a four-year institution?
3. Is there a significant difference in grit depending upon GPA (2.0 and above vs. 1.99 and below) for vertical transfer students at the end of their first semester in a four-year institution?

Summary of Findings

Central to this study was the exploration of the relationship between vertical transfer students' grit, academic performance, and social integration during their first semester of enrollment in a four-year institution. Participants' self-reported Grit-S survey scores functioned as the independent variable and were compared and contrasted with the participants' first-semester academic performance, social integration, and final first-semester GPA. Below is a summary of the findings from each of the three research questions.

One negative statistically significant correlation was found between the VTR cohort's Grit-S scores and rate of missing assignments. Outside this finding, no other statistically significant correlations between the VTR cohort's Grit-S scores and their first-semester academic performance indicators (i.e., first semester GPA performance and Canvas system activity) were identified. Further, this study found no statistically significant relationships between the VTR cohort's Grit-S scores and their first-semester social integration activities (i.e., OrgSync platform activity and campus residential status). Finally, this study found no differences in participant Grit-S scores depending on whether their first semester GPA was at or above vs. below the minimum 2.00 retention standard.

Conclusions

Grit and Academic Performance

This area of analysis showed no statistical significance across the matrix. However, it should be noted that one variable showed a weak statistically significant negative correlation – missing assignments. The VTR cohort completed assigned work

and Canvas course requirements on time. This result, indicating a low rate of assignments not completed or submitted, was consistent with the VTR cohort's overall level of academic performance and suggests the VTR cohort was conscientious when completing assigned work in their courses. The Canvas data suggests that vertical transfer students who successfully completed an associate degree at a two-year institution arrive with the tools to be academically successful in a four-year institution. In reviewing the VTR cohort's academic performance, the cohort had an average first-semester GPA of 3.13, and three-fourths of the VTR cohort had a Grit-S score of 3.6 or above (out of 5). In comparison, the VTR cohort transferred into the study site with an average cumulative GPA of 3.24, so the cohort showed only a minimal drop in GPA performance.

Further, based upon their work in the Canvas system, these students maintained a decile activity level in their courses of 5.37, which indicated that their use of Canvas was consistent with more than 50% of all students enrolled in the same courses. Existing literature on grit supports the finding that this cohort's first-semester academic success was consistent with their level of grit (Duckworth, 2007). Strayhorn's (2008) research demonstrated a positive association between grit and achievement, which supports the lack of such a relationship in this study. In essence, the VTR cohort could be regarded as "gritty" since they had high grit scores upon entering. Fitzgerald and Laurian-Fitzgerald's (2016) assertions that vertical transfers have a goal and intended outcome and remain focused on achieving also support the conclusion of grittiness. If grit were to be a significant variable in the VTR cohort's academic performance, it could only be observed in subsequent semesters of enrollment, as additional data would provide a sense of future academic performance. As the study utilized archived first-semester data, it is worth

noting that utilization of longitudinal data collection beyond the first semester may have been needed to uncover any potential relationships between grit and academic performance.

Grit and Social Integration

Although the data set showed no significant correlation between grit and social integration, the information gleaned is revealing with respect to the level of the VTR cohort's active engagement (i.e., log-in and portal activity) during their first semester of enrollment. OrgSync percentiles indicate that the majority of the VTR cohort had a low level of log-in activity, with the 25th percentile never having logged in and the 50th percentile having logged in only once. Townsend and Wilson (2006) note that vertical transfers struggle with forming social connections. While conclusive as to usage, the OrgSync percentile data does not necessarily mean the VTR cohort struggled to integrate into and connect with the campus during their first semester of enrollment. It simply confirms that the VTR cohort minimally used the platform. Absent qualitative data, it is difficult to posit why the cohort did not formally engage with the system more often; participants' active voices are needed to more clearly understand this aspect of the data. However, it is important to note that VTR cohort participants may have been aware of and engaged in social opportunities on campus through other means, such as information disseminated through Canvas, campus flyers, general university email notifications, or word-of-mouth information.

Ultimately, the VTR cohort had a high level of grit and demonstrated a strong overall academic performance during their first semester in a four-year institution without actively engaging with the OrgSync platform, which may very well have been by design.

One potential reason for the low level of activity may relate to Tinto's (1997) assertion that attending college is just one of many to-do list items or responsibilities that transfer students need to accomplish on a daily basis, which leaves minimal time for social engagement. If this cohort was similar to students Tinto describes, their OrgSync platform utilization may reflect their external commitments. The study site may find that the term "vertical transfer" is synonymous with students who matriculate in with an established record of academic success and who will continue to succeed academically during their first semester even with potentially limited campus involvement.

Implications

The findings from this study provide important information with respect to academic performance and social integration activities of vertical transfer students during their first semester of enrollment at a four-year institution. Data showed that the VTR cohort students on the whole performed strongly during their first semester, and therefore did not fall victim to Hill's (1965) observed transfer shock phenomenon. On the surface, such findings could be considered surprising based upon the ubiquitous presence of transfer shock and the assumption that all transfers stumble during their first one to two semesters. However, in this study, the findings present vertical transfer students' fortitude and abilities.

Implications for Higher Education

Findings such as those in this study can serve to change the dialog with respect to understanding and working with transfers within four-year institutions. A cohort of students who have completed a program of study and achieved an associate degree may be well-prepared to advance to a four-year institution and succeed. If vertical transfer

students are less vulnerable to concerns of shock and academic performance, then institutions should be encouraged to consider potential vulnerabilities within other subsets of transfer students on their campus. Not all transfer students are created equally. With the mandatory tracking and reporting requirements now in place with IPEDS, it is imperative that four-year institutions seek to understand the patterns of academic performance and shock among all transfer student cohorts to support both the students' success and to demonstrate effective institutional retention and graduation efforts. Four-year institutions will need to work collaboratively with two-year institutions to understand the types of transfer students that are following pathways to their campuses. They will also need to shore up communications and collaboration between on-campus units such as advising, academic departments, and admissions to ensure there is transparency and clear education about the variations among transfer students matriculating in. Efforts to share accurate and informed information on the needs and potential challenges for various types of transfer students will enable on-campus units to intentionally shape programs and services to address transfers' needs proactively.

In addition to understanding the various types of transfer students matriculating into four-year institutions, it is also recommended that four-year institutions seek to explore the underlying non-cognitive skills and needs those students possess to understand them in a more holistic manner. Borghans, Duckworth, Heckman, and ter Weel (2008) consider non-cognitive skills to be patterns of thought, feelings, and behaviors that grow and change over one's life, which means it is important to remember that transfer students are still developing and changing as they navigate into and through four-year institutions. While this study showed no significant correlation between grit and

the VTR cohort's academic performance or social integration, that does not mean other non-cognitive factors, or soft skills, may have influenced or impacted the students' first-semester experiences. It is also possible that grit, while not significant in the findings for this study, could still have been a factor for the VTR cohort if the data had spanned out to include an additional semester or tracked their progress over a two-year span. The Economic Policy Institute report (Garcia, 2014) paraphrases Heckman and Kautz's (2012) assertion that "soft skills predict success in life, that they produce that success, and that programs that enhance soft skills have an important place," which is a telling position for four-year institutions to adopt as well (p. 10).

Implications for Study Site

Adopting the view that transfer students are not created equally would serve as an informed starting point for the study site with respect to how it employs orientation/ acclimation services and the OrgSync platform with transfer students. Historically, the study site admits an average of 1,500 transfer students each fall semester and 800 transfer students each spring semester. Each transfer population is comprised of students from most, if not all, of the state's 19 community colleges, as well as out-of-state institutions. The site's transfer students represent a continuum of college experiences, with some students bringing in as few as 12 credits and others over 100 credits. Yet outside of quantifiable admissions-level data such as incoming transfer GPA, credits earned, and intended major, there is minimal awareness of these students' variations and needs. Without deeper awareness of transfers as a whole and the variations among them, assumptions may fuel the study site's marketing and admissions campaigns, which, while well-intended, may miss the mark entirely or telegraph a lower level of commitment to

understanding and supporting transfers. Presently, the study site does not collect data other than cognitive measures for vertical transfers or for the general transfer student population. Considering that each transfer cohort represents a combination of students matriculating from an out-of-state campus to the study site, students transferring laterally from one four-year institution to another, and those transferring in with earned credits but no associate degree, it is essential to delve further into their similarities and differences and identify non-cognitive aspects . This level of understanding would provide the study site with the means of clarifying and clearly conveying their commitment to these students through both their transfer student admissions efforts and the support services provided.

The absence of this information has led to macro-level services and support offerings that may ultimately miss the mark because they are designed to strictly meet the cognitive factors present within the overall transfer cohort. The VTR cohort showed an overall high level of self-reported Grit (3.6) and earned an average first-semester GPA of 3.13. Their fall performance showed a slight dip when compared to their average two-year sending institution GPA of 3.24, but it still demonstrated a higher level of academic achievement. As these results were specific to a cohort of vertical transfers from in-state two-year community colleges, the question remains as to whether other subsets of transfer students would have shown similar academic performance. As of Fall 2015, the site hosted mandatory orientation services for students based strictly upon the credits earned, meaning students with 29 or fewer earned credits were required to attend new student orientation with freshmen, while all other transfers attended a mandatory TSO. The efficacy and impact of the orientation services on incoming transfer students,

particularly in light of the VTR cohort's high level of grit and subsequent academic performance, demands deeper review. Combining more nuanced knowledge about the types of transfer students with an exploration of the orientation services provided would aid student services offices and staff in modifying and/or creating services expressly designed to meet transfer students' needs and expectations. In particular, it would enable the site to consider its current approach to the transfer pathway, including orientation and acclimation, in light of a deeper understanding of student needs.

In addition to examining the practices and design of orientation, the VTR cohort's low level of activity within the OrgSync platform implies that social integration may not be a priority for vertical transfer students. The cohort demonstrated that they had the fortitude and commitment to succeed academically and that they were prepared and capable of handling the rigor of academics at a four-year institution. Yet, for any number of reasons, they did not turn to or utilize the study site's primary tool for social events and campus activities during the semester. The VTR cohort's performance and level of engagement was clear, but whether social integration was not feasible due to time commitments or simply not a priority was less clear. In this respect, insight and clarity on the combination of internal pathway tools in place at the study site (orientation, OrgSync) and their efficacy with respect to vertical transfer students, as well as the broader transfer student cohort, is needed to ensure programs and services meet the needs of their students as opposed to simply serving as "to-do" items for students.

From an external vantage point, the findings from this study could help shape efforts in creating and developing partnership programs with two-year institutions. Via these partnerships, satellite offices could be created on two-year campuses and the study

site's Admissions Office could work collaboratively with staff at the two-year campuses throughout the year. A direct presence on a two-year campus would enable the study site to actively survey and identify the prevalent soft skills and non-cognitive qualities among two-year community college student populations to begin to assess their skills and needs and measure students' social integration behaviors to understand how they choose to engage with the campus. Such dynamic information would enable the study site to build a more seamless climate into which transfer students could acclimate, a climate that would receive and support their academic and social integration needs both in policy and practice.

Recommendations for Future Research

Based upon this study's findings, conclusions, and implications, the researcher makes the following recommendations for future practice. Replication of this research as a mixed-methods study is recommended for the voice and personal reflections of vertical transfer students to be included in the analysis process and to incorporate the non-quantifiable aspects of their transition into a four-year setting. In a further iteration of the study, it is recommended that researchers expand their analysis to review at least a full academic year (two semesters) to present longitudinal findings that encompass one to two semesters of transition and the potential onset of transfer shock, as identified by John Hills (1965). Such expansion would enable researchers to consider incorporating pre- and post-evaluation efforts, with any inventories used in the study to demonstrate dynamic rather than static findings that result from only one semester's data.

Next, as grit was determined not to be correlated with the VTR cohort's first-semester academic performance or social integration, research should be conducted that

focuses on other non-cognitive qualities that may be correlated with this cohort, such as those identified by Rothstein (2009): “critical thinking skills, problem solving skills, emotional health, social skills, work ethic, and community responsibility [and] persistence, academic confidence, teamwork, organizational skills, creativity, and communication skills” (p. 7). In addition to non-cognitive factors, further examination of vertical transfer students’ social engagement patterns is advised. While findings from this study indicated that the majority of the VTR cohort did not utilize the site’s OrgSync platform, it is presumptuous to suggest that they were any less socially engaged – they may have simply used alternate pathways to integrate socially. Investigating how and where vertical transfer students get what they need, socially speaking, is crucial to support the transfer experience. Such lines of inquiry would aid researchers and four-year institutions alike in broadening the literature and practical measures enacted to impact vertical transfer students’ transitions and experiences.

Finally, to further research on non-cognitive qualities and their relationship to transfer students, studies on other transfer cohorts or subsets are recommended. While the vertical transfer subset was the focus for this initial study, Handel and Williams (2012) determined that there are 14 variations of transfer students within higher education. Such a wealth of cohorts indicates there are many areas of inquiry that warrant study to determine patterns of commonality and distinction. Insight into the full continuum of transfer students and their experiences, needs, and challenges will enable both two- and four-year institutions to review and reconsider both their approach and intended return on resource allocation, policy structure, and programmatic efforts aimed to supporting and encouraging transfer student retention and success.

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Appendix A: Study Site – New Student Grit Survey

CWID:

Last:

First:

New Student Grit Survey

Here are a number of statements that may or may not apply to you. For the most accurate score, when responding, think of how you compare to most people – not just the people you know well, but most people in the world. There are no right or wrong answers, so just answer honestly!

1. New ideas and projects sometimes distract me from previous ones.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

2. Setbacks don't discourage me.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

3. I have been obsessed with a certain idea or project for a short time but later lost interest.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

4. I am a hard worker.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

5. I often set a goal but later choose to pursue a different one.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

6. I have difficulty maintaining my focus on projects that take more than a few months to complete.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

7. I finish whatever I begin.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

8. I am diligent.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

CWID:

Last:

First:

New Student Grit Survey

Here are a number of statements that may or may not apply to you. For the most accurate score, when responding, think of how you compare to most people -- not just the people you know well, but most people in the world. There are no right or wrong answers, so just answer honestly!

1. New ideas and projects sometimes distract me from previous ones.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

2. Setbacks don't discourage me.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

3. I have been obsessed with a certain idea or project for a short time but later lost interest.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

4. I am a hard worker.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

5. I often set a goal but later choose to pursue a different one.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

6. I have difficulty maintaining my focus on projects that take more than a few months to complete.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

7. I finish whatever I begin.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all

8. I am diligent.

☐ Very much like me ☐ Mostly like me ☐ Somewhat like me ☐ Not much like me ☐ Not like me at all